

**CLAIMS:**

1. A method of bonding wire between first and second bonding points with a bonding tool, comprising the steps of:

- 5        forming a first bond at the first bonding point with the bonding tool;  
      moving the bonding tool away from the first bond by a first distance;  
      moving the bonding tool towards the first bonding point and coupling the wire to the first bond;  
      moving the bonding tool away from the first bond by a second distance;  
10       forming a kink in the wire;  
      moving the bonding tool to extend a sufficient length of wire to form a wire loop between the first and second bonding points; and thereafter  
      moving the bonding tool to the second bonding point to form a second bond.

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2. A method according to claim 1, wherein the step of moving the bonding tool away from the first bond by the first distance includes the steps of moving the bonding tool substantially vertically upwards and thereafter moving the bonding tool towards the second bonding point.

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3. A method according to claim 1, wherein the step of moving the bonding tool away from the first bond by the first distance includes the steps of moving the bonding tool substantially vertically upwards and thereafter moving the bonding tool away from the second bonding point.

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4. A method according to claim 3, wherein the step of moving the bonding tool away from the second bonding point comprises moving the bonding tool in a curved motion to a point outside a vertical plane passing through the first and second bonding points.

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5. A method according to claim 4, including the step of subsequently moving the bonding tool towards the first bonding point in a curved motion to a point on the vertical plane passing through the first and second bonding points before coupling the wire to the first bond.

6. A method according to claim 1, wherein the step of moving the bonding tool away from the first bond by the second distance comprises the step of moving the bonding tool substantially vertically upwards.

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7. A method according to claim 6, including the step of moving the bonding tool away from the second bonding point after moving the bonding tool vertically upwards.

10 8. A method according to claim 1, wherein the step of forming a kink in the wire comprises the steps of moving the bonding tool from a first position to a second position in a direction away from the second bonding point, and from the second position back to the first position.

15 9. A method according to claim 1, wherein a diameter of the wire is approximately 1.0 mil or less and a height of a highest point on the bonded wire relative to the first bonding point is less than or equal to 2.35 times the diameter of the wire.

20 10. A wire loop including a wire bond comprising a ball-bonded base portion, a neck portion integrated with a top of the base portion and a wire extending from the neck portion substantially transversely to an axis passing through the base portion and the neck portion.

25 11. A wire loop according to claim 10, wherein the neck portion of the wire loop has a substantially uniform cross-sectional area.

12. A wire loop according to claim 10, wherein a diameter of the wire is approximately 0.8 mils and a height of a highest point on the wire loop relative to  
30 a bottom of the base portion is less than or equal to 2.35 times the diameter of the wire.

13. A wire bond according to claim 10, wherein a diameter of the wire is approximately 1.0 mil and a height of a highest point on the wire loop relative to

a bottom of the base portion is less than or equal to 2.08 times the diameter of the wire.

5 14. A wire loop including a wire bond comprising a ball-bonded base portion, a curved portion integrated with a side of the base portion which twists in a direction substantially transverse to an axis passing through the base portion and a bonding point of the wire bond, and a wire extending from the curved portion.

10 15. A wire bond according to claim 14, wherein the curved portion of the wire loop has a substantially uniform cross-sectional area.

15 16. A wire bond according to claim 14, wherein the curved portion extends along at least a part of a perimeter of the base portion.

17. A wire loop according to claim 14, wherein a diameter of the wire is approximately 0.8 mils and a height of a highest point on the wire loop relative to a bottom of the base portion is less than or equal to 2.1 times the diameter of the wire.

20 18. A wire bond according to claim 14, wherein a diameter of the wire is approximately 1.0 mil and a height of a highest point on the wire loop relative to a bottom of the base portion is less than or equal to 2.0 times the diameter of the wire.